Software Quality FS 2010

Exercise 3 - Discussion

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Outline

- Frequent problems in exercise 3
- Wrap Up
- (Formalities for the exam)
- Open positions for students @ RERG

Exercise 3

In general…

- ~ for the first part
- great wiki articles

Exercise 3.2
Defining Quality

Internal quality: quality of intermediate artifacts

static / dynamic models, documentation and source code

External quality: quality of the final system assessed by its external behavior

execution in a simulated environment, with simulated data

Quality in use: effect of the system in use

extent to which users can achieve their **goals** using the system in their **context of use**

Exercise 3.2
User needs

Effectiveness (≠ Efficiency)
- Improvement of various characteristics of photos (color balance)
- Correction of small defects in photos (red eyes, planes in sky)

Productivity
- Reduction of time needed for photo editing
- Batch processing of photos

Safety
- Preservation of the original photo
- Ability to undo changes

Satisfaction
- Invitation to creative exploration
- Stable editor

Exercise 3.2
Verification

Qualitative requirements are not directly verifiable (see chap. 8)

Quantification (GQM)

- «Stable editor»
- Mean time to failure below 100 hours

Operationalization (solution oriented)

- « Invitation to creative exploration »
- Support of various artistic filters

Comparison with existing products is not a technique for verification !

Exercise 3.2
Typical features of photo editors

Histogram
Lasso selection
Clone tool
Layers
History
Support of various file types
Scripting language
Edge detection
Artistic filters
Automatic periodic save
(see http://en.wikipedia.org/wiki/Image_editing)

Exercise 3.2
Features and external quality

Which external quality attribute is improved by « Undo functionality » ?

- Reliability (recoverability)
- Functionality (security)
- Efficiency
- Functionality (suitability)
- Functionality (compliance)
- Usability (operability)
- Usability (learnability)

Exercise 3.3
Improving ImageJ

ImageJ was meant for image (microscopy) processing, not photo editing

→ More than just bug fixing

HoQ: Means-end analysis

Product's features (external quality)

Needs of users (quality in use)

Interpret your HoQ…

Wrap Up

In theory there is no difference between theory and practice. In practice there is.

-- Jan L. A. van de Snepscheut or Yogi Berra.

Exercise 1: SPIN and PROMELA

Exercise 2: Testing / Debugging

Exercise 3: Quality requirements / ISO 9126

Exam

Location: BIN 2.A.10

Date: Monday June 7, 2pm

Duration: 90 minutes

Language: German

Structure: 1/3 MCQ, 1/3 Case study and 1/3 Essay

- Sample exam is available on the lecture's website

Scope: Lecture's slides + Exercises

Cheat sheet: 1 double-sided handwritten A4 page

Open positions for students
RERG needs you…

- Open positions
  - 1 TA in Software Engineering (4 ECTS)
  - ½ TA Requirements Engineering (2 ECTS)
  - Some tutors for Informatics for Economists (2 ECTS)
- Tasks
  - Preparation & correction of exercises
  - Discussion about exercises
- Contact:

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